PROPOSED PLAN TO REDUCE CONTAMINATION NEAR THE INJECTION WELL AND SURROUNDING GROUNDWATER AT TEST AREA NORTH

Public Meeting
Westbank Inn
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PANEL MEMBERS:

Lisa Green, DOE-Idaho
Howard Blood, U.S. EPA
Donna Nicklaus, DOE-Idaho
Jerry Zimmerle, EG&G
Dan Harelson, DOE-Idaho
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MODERATOR GREEN: Okay. I'd like to reconvene the meeting for our second topic.

Before I do that, I'd like to introduce Sidney Hoop, who is a representative of Congressman Stallings. Would you raise your hand?

The next topic that we have for discussion is the proposed plan for the interim action to reduce contamination near the injection well and the surrounding groundwater at the Test Area North of the INEL.

We'll continue to follow the same meeting format and general ground rules.

I'd like to introduce again Mr. Ron Lane to my left here, the new panel member who is representing the State of Idaho. The TAN area is Ron's project area for the Division of Environmental Quality, and again he is an environmental hydrogeologist.

And with this, I'd also like to introduce some new folks on the table to my right, Dan Harelson, sitting in the nearest right. Dan works for DOE-ID and he is the project manager for all the cleanup activity at the Test Area North.

To his right is Jerry Zimmerle, who will be making the next presentation. Jerry is EG&G project manager for the injection well and groundwater remediation project at the Test Area North Area.

Before Jerry starts his presentation, I'd like to remind you that you will be provided an opportunity for clarifying questions after his presentation. Please feel free to write down the questions as they come to mind on the note cards and they will be handed up to the panel to address.

With that, I'd like to present Jerry Zimmerle.

MR. ZIMMERLE: Good evening. As Lisa said, my name is Jerry Zimmerle, and I'm the project manager for the interim action on the Test Area North injection well.

I'd like to welcome you here tonight and one thing I'd like to give you is essentially a visual presentation of our proposed plan, something that will allow you to see the data in a little different way than we have on our plan and to give you a chance to come back and comment to us on what we're planning to do.

The Test Area North is located in the northern portion of the Idaho National Engineering Laboratory. It's about 15 miles west of Terreton.

One of the key things that I wanted to find out when I first got onto this project was, where was the contamination located that came from the injection well that we're concerned about. And as you can see, the contamination plume is still within the general area of the Test Area North.

And what I wanted to do this evening was to kind of bring you in and show you where this contamination came from and how it's spreading through the aquifer.

Now, the Test Area North consists of four major facilities, but the one we're primarily concerned with is the Technical Support Facility, which is located in the center.

It was from here that the wastewaters that went into the injection well were generated, and over time what happened is that different wastewaters with organics, metals and radionuclides went into the injection well and began moving to the southeast, which is in the

general direction of groundwater flow at TAN.

The well itself is located in the southwest corner of the Technical Support Facility. It was used from 1955 to 1972. And as you can see, in the 37 or so years since the well was first used, the contamination has moved down to about this point.

There are two things that we want to do concerning this contamination plume, and the first thing is going to be a Remedial Investigation/Feasibility Study, a subject that Mr. Dan Harelson is going to talk about later this evening.

And in this study, what we're going to do is try to define a little bit better how deep this contamination is, and also give us a better idea of some of the properties of the aquifer, so we can design a better system to look at how we're going to impact or change how we determine what this plume looks like.

Under the interim action what we're going to do is concentrate roughly within this area, that's about a quarter mile to a half mile away from the injection well. And it's right in here that the higher levels of contamination

are. And what we're going to do is go after these higher levels of contamination to keep them from spreading further out into the aquifer.

What I want to do right now is give you also an idea of what the vertical or what the -- how the injection well looks underneath the ground, show you how the contamination has been moving.

Now, the injection well itself is right here. It's a 12-inch diameter well, goes down to about 300 feet under the ground.

This well is just the same type of thing that a farmer would use to pull water out and irrigate his fields, but in this case what we have is the reverse occurred where we injected wastewater into the ground and let it move down to the southeast.

The water table at TAN is right about 200 feet, and so what we have is about 100 feet of this pipe that is open to the aquifer that lets the wastewater drain out.

As you can see, most of the contamination is right within the general area of the injection well. As you get down farther, a mile, mile and a half away, it drops down by as

much as 20 times to 25 times the level of contamination at the injection well.

Of the different types of contaminants that went down the injection well, we're mainly interested in the four contaminants that have the highest level of concentration and that also exceed drinking well standards in the groundwater.

In this case, we have strontium, which is a radionuclide, lead, which is a metal, tetrachloroethylene and trichloroethylene, which are both organic compounds.

One thing we're showing you for each of these contaminants is a boundary which is the drinking water standard, and then also the higher levels of contamination we're finding near the injection well.

One key thing about this slide, and one of the reasons that we went and kept the interim action roughly within a quarter to half mile boundary, is that only trichloroethylene has gone a mile and a half to the south of the injection well. All of the others are still within that quarter-mile boundary, and the higher levels of contamination are still right in that area.

also.

Now, the reason we're doing this interim action primarily is to prevent further degradation of the aquifer. We want to go after that higher level of contamination near the injection well and reduce it down to keep it from moving farther out into the groundwater.

We're going to get a couple extra benefits from doing that. We'll be able to reduce the complexity and cost of any further actions we do that we're going to evaluate under the remedial investigation.

Also, during the two years or so that we want to operate this interim action, what we'll be able to do is provide information back into the remedial investigation, allow us to improve our decision-making process and make a better choice of the final action.

We looked at a number of different alternatives before we came down and selected these four for the interim action.

Alternative 1 is a no-action alternative, and the other three are all ground water extraction or pump-and-treat, where we will take water out of the ground and run it through a

treatment process.

Alternative 2 is our preferred alternative, air stripping and carbon absorption, and I'll get into why that is the case a little bit further on in the presentation.

One thing I wanted to bring out now is that the no-action alternative, as Donna Nicklaus explained in the earlier presentation, did not meet the threshold criteria. In this case, we have the same thing occurring. We do not protect human health and the environment, we don't meet the legal requirement, so we did not consider no action any further.

Now, on the approach on the interim action, what we're looking at, and that is assuming that Alternative 2 is the preferred alternative, is we're going to build on some previous work on the interim action itself.

Back in January of 1990, the lower 55 feet of the injection well was filled with a concentrated sludge, so we went, pulled that sludge out, put it into drums for disposal.

Next, we went and we flushed the general area around the injection well, pulled up some more contamination that was just outside the

well casing.

What we want to do under the interim action is then go out and do a pump test on this well to try to determine how much contamination we may still have around the well, and then we'll go into the interim action where we'll begin the regular pumping, pull out more contamination within the rough area of the injection well, and then go to some of these other wells in the area and pump on them again to reduce the overall levels of contamination in this area.

The treated water is going to end up in this disposal pond. We'll allow it to percolate down through the ground and also evaporate up into the atmosphere.

Of the three alternatives we evaluated under the interim action, all of them have common features. We start out with taking the groundwater, which will have the contaminants plus some solid materials such as sand and grit, and send it through a prefilter. And in this case, it would be something like a tank, where we let the solid material settle out, or like an oil filter in your car where it would stop the solids and let the water continue on.

Then we would send it through some type of organic treatment system, and I'll give you some more details on that in the next few slides. And finally, through an ion exchange, where we remove the lead and strontium.

Now, an ion exchange system essentially is a column filled with little beads. And these beads act just like the water softener at home. The atoms of lead and strontium will come over the beads and be pulled out and exchanged for atoms of sodium or hydrogen. The treated water will end up in a disposal pond.

Over time, this these ion-exchange beads become filled with the strontium and the lead. They become a radioactive waste. And we haven't decided where we're going to dispose of this material yet. That will be determined while we're looking at the proposed action or the final action.

Now, the preferred alternative is No. 2, and in this case what we're going do is take the water out of the prefilter and put it through an air stripper column.

An air stripper is a large column full of plastic rings. We put the water in at the

top, let it spread out over the rings, going to thinner and thinner layers. What happens is, we then put air in the opposite direction, and the organics, just by the chemical nature, move out of the water into the air.

We'll then take that air, run it through a carbon absorption system. What this will do is take kind of the reverse process of the air stripper. It will remove the organics out of the air, put it into the carbon and we'll be able to discharge the air into the atmosphere.

The carbon itself will become full of the organics. We'll take that to an EPA-approved recycling facility or disposal facility. And what we're looking at is trying to get the carbon back so we can continue to reuse the carbon.

Now, the two reasons we like this alternative, number one, we can separate out the hazardous and the radioactive components. What this will do is allow us to handle the waste streams more easily than if they were mixed together.

And the second reason is air stripper is a common technology. It's used across the

country. It's easy to design. It's easy to implement.

Now, Alternative 3, what we've done is taken out the air stripper and brought the carbon absorption system down. An in this case, the water will be actually treated by the carbon.

What will happen is, again, we'll get the organics out, but we'll also get some of the metals and the radionuclides, so what happens is this then becomes a mixed waste, a combination of the hazardous and radiological components.

Now, this is much more difficult to get rid of, it's much more expensive to get rid of, so we're trying to avoid mixed waste generation if at all possible in this interim action.

This is the reason we decided this alternative is not as good as Alternative 2.

Now, on Alternative 4, we used something slightly different to get rid of the organics. We used an ultraviolet light combined with chemicals that go after and attack the organics, break them into their basic components, which is water, carbon dioxide and salt.

In this case, we have the benefit of producing neither hazardous waste nor mixed

waste, but the technology itself is not as proven as the air stripper technology. It's also a little bit more difficult to design and operate, so we thought that this alternative was not as good as Alternative 2.

Now, a comparison of the alternatives following the CERCLA or Superfund criteria, the two threshold criteria, all three of these alternatives meet those, so we continued them through the evaluation process, where no action did not and we moved that one to the side.

We then looked at the two key requirements we wanted to meet.

The first one is not generating any mixed waste. And in that case, both Alternative 2 and Alternative 4 met our criteria and received best grades, where Alternative 3 which produces a mixed waste received a poor grade.

From there, we went and looked at design or implementability. Alternative 2 and 3 are both easy to implement, they got best and good grades, where Alternative 4 would take a more detailed design process and we gave that one a poor grade.

From there we went into actual

operation. Over the short-term and the long-term, we believe that Alternative 2 will be simpler to operate, less waste that will have to be dealt with, so this becomes a better alternative than either Alternatives 3 or 4.

Now, the next two things we had to consider for the modifying criteria is State and community acceptance. As has been mentioned before, we work with Mr. Ron Lane, and the State agrees that Alternative 2 is our preferred alternative.

And the last question we have to evaluate, which is exactly why we're here tonight, we're looking for your input on not only Alternative 2, but also Alternatives 3 and 4 and the overall evaluation process.

Now, the quick summary, the reason we picked Alternative 2 is because it does not produce mixed waste and it uses a proven available technology that we can easily design and readily implement.

And to give you an idea of what's happening after this public comment period ends on March 13, we'll take your comments and go and use them in our evaluation process and come up

with a final alternative. And that will be detailed in a Record of Decision which will contain that alternative, the legal requirements we have to meet, and also the Responsiveness Summary, which would contain the comments we receive from you.

By spring of '93, we're looking at completing the remedial design, and then going in and actually turning on the pump, if that type of alternative is selected, by the summer of 1993.

And that concludes my presentation.

MODERATOR GREEN: Thank you, Jerry.

Are there any questions of clarification specifically on Jerry's presentation that people would like to ask Jerry?

Yes, ma'am.

AUDIENCE MEMBER: Could you show the slide of the side view of the well?

MR. ZIMMERLE: Um-hmm.

AUDIENCE MEMBER: Is it more contaminated to the left of the well, in other words, upstream?

MR. ZIMMERLE: Not to a great extent. What we found is that we have groundwater flow

that moves to the southeast, in this direction, so we do have a little bit of contamination to the north and west of the well, I would say 100 feet, but that's not a real solid number.

The vast majority has moved in the direction of groundwater flow to the southeast, and it's also impacted by the production wells at TAN that pull water out of the gound and it's moved kind of to the northeast. So there's really not a whole lot of contamination to the north and west.

Would you like to see the aerial view? That might help with that.

This is to the west, north is straight up.

What we try to show is there's not a tremendous amount of contamination right here. We have some -- there's other monitoring wells right in this area and the contamination to the north side drops off very rapidly.

MODERATOR GREEN: Yes, sir.

AUDIENCE MEMBER: Jerry, what do you know about the depth of contamination of the aquifer?

MR. ZIMMERLE: At the moment, we found

contamination down to about 400 feet. And one of the whole purposes of the remedial investigation study is to go even deeper than that and find out how much lower it goes. This chart only goes to 350, but I believe we have one more well that goes even deeper than that.

MODERATOR GREEN: Yes, sir.

AUDIENCE MEMBER: How fast does the aquifer water move underneath the Test Area North?

MR. ZIMMERLE: I believe it's a foot a day, which is substantially slower than the rest of the INEL.

AUDIENCE MEMBER: What does the rest of the INEL average?

MR. ZIMMERLE: I believe they're closer to six feet a day. I trust the one foot a day. If you'd like to get a better number for the rest of the INEL, make a comment card and we'll take care of that.

MODERATOR GREEN: The rest of the INEL, I believe, is subject to a range, and I believe the range is like three to ten feet or something like that.

MR. ZIMMERLE: Okay, yeah.

AUDIENCE MEMBER: Jerry, have you got any more details on how you're going to run that pumping operation? Is it going to be how many months out of the year, 24 hours a day, are you going to close the well, any details?

MR. ZIMMERLE: In the proposed plan we set it at five days a week, 24 hours a day and shutting it down on the weekends.

AUDIENCE MEMBER: What about the winter months?

MR. ZIMMERLE: Same for the entire year. We might have put 50 weeks a year to give people breaks for holidays, but I can't remember for sure right now. It's in detail in the proposed plan.

AUDIENCE MEMBER: Do you plan to stop pumping once you're recovering less than a part per million in organics?

MR. ZIMMERLE: Right now what we're going to do is operate the facility for up to two years. When the Remedial Investigation/Feasibility Study, the Record of Decision for that, is finished, what we'll do is we'll feed the interim action into that and evaluate on whether we should continue or not.

So there's not a specific number that's been set at this time.

MODERATOR GREEN: The two TAN studies that we're talking about tonight are very closely linked, and that is the linkage. The completion of the cleanup would occur with the completion of the second study, the Remedial Investigation and Feasibility Study.

Are there questions?

Yes, sir.

AUDIENCE MEMBER: Has there been any quantitive analysis made as far as any of your heavy minerals, as far as let's say for example mercury?

MR. ZIMMERLE: Yes, sir. The mercury levels, they're much less than the lead levels I showed up there. They're in the -- for a guess -- the tens of parts per billion. And so they're much, much less than the lead.

AUDIENCE MEMBER: Now, would you feel that if your test drilling would, because the fact the metal is so heavy and it could transgress into the aquifer at a deeper and faster level, we're going back to essentially in the early '50's when mercury was used on ACR 1

and 3 and it was flushed out with carbon tet. Now, that would sink the fastest and could go the deepest.

MR. ZIMMERLE: We haven't seen any real pockets of mercury contamination in the groundwater. Most of what we've seen has been soluble mercury. It's very low levels in the groundwater.

Also, at the bottom of that well, it's not a straight drop. You'll find that anything that would have come down the injection well that would be a more concentrated form would be stopped fairly quickly. And then from there you go and most of that would tend to dissolve back into the water and that's where we would see it.

AUDIENCE MEMBER: Mercury don't dissipate in water, it's going to run faster than water. Try to catch it.

MR. ZIMMERLE: Well, anyway, what I can tell you is that we do not see a tremendous amount of mercury. If there was a lot of mercury down near the well itself, we'd have fairly high concentrations in the water. And we're not seeing that.

MODERATOR GREEN: Yes, sir.

AUDIENCE MEMBER: Will the air filters on the carbon absorption system capture any strontium? And if so, how effective are they for the range of particle sizes you're likely to encounter? Are there any unknowns here that it would pose of raising of airborne radionuclides emissions?

MR. ZIMMERLE: We haven't gotten to the point of actually designing the air stripping systems, but that's one of the things that we are going to consider, whether that will be a problem or not.

AUDIENCE MEMBER: Will it be like those HEPA filter deals?

MR. ZIMMERLE: I can't give you a definite answer now. We'll have to see what the levels of contamination are and then go into the design process at that point. Any -- let's just say we'll go through the design process. If it is required, we'll evaluate it and put on it any system that's necessary.

MODERATOR GREEN: Any other question? Yes, sir.

AUDIENCE MEMBER: I imagine one can answer that question by considering that what

comes out will have come out dissolved in water, so it won't be in particulate form to start with.

MODERATOR GREEN: Was that a question or an answer or comment?

AUDIENCE MEMBER: That was a comment.

MODERATOR GREEN: Okay.

Yes, sir.

AUDIENCE MEMBER: At this point you're only speaking of a well; right?

MR. ZIMMERLE: Correct. We will do some -- I mentioned in the presentation, there are some other wells within the immediate vicinity of the injection well, and we'll go after some of the contaminant levels in those wells, also.

AUDIENCE MEMBER: Because you had contamination with drinking water at IET and you got one of the largest of the wells there and you've got several others in the site.

MR. ZIMMERLE: We haven't found anything up in the IET level. We only found one instance where we had some contamination, and that was below drinking water standards. Since then we haven't found any.

AUDIENCE MEMBER: Where does TAN currently get its water from, from the aerial view you've shown here?

MODERATOR GREEN: Do you want to discuss the production wells and the treatment system that's in place?

MR. ZIMMERLE: Up in the northeast corner of TAN, right on the very edge of the drinking water boundary, there are two production wells where they get their raw water.

Right now, there's a State-approved sparging system or treatment system on that raw water, and they test the water monthly, and so far that water or the treatment system meets drinking water standards.

MODERATOR GREEN: Any other questions? We can get started on some of these note card questions if there aren't.

"Wouldn't it be more cost effective to utilize the no-action option regarding the cleanup of the injection well at TAN? Point being that the concentration levels at the edge of the contamination plume are already at EPA safe drinking water level and given time those concentration levels will continue to the drop as

the contaminated plume is further diluted by groundwater. This will save 7.7 million dollars."

I'm not sure that we can consider it more cost effective. It certainly would be cheaper in the near term. It would cost less dollars in the near term. The point of our interim action is to get at the most concentrated levels of contamination that are near the injection well and pull them out so they are not further diluted in the aquifer.

Also, it's been pointed out that the drinking water supply at TAN has been contaminated exceeding drinking water standards, and while we do have a treatment system operating on it so that people are not drinking water that exceeds those standards, we have had contamination in the drinking water source.

And that was considered in the placement of the INEL on the national priorities list.

Do you want to take one or two of your questions, Jerry?

MR. ZIMMERLE: I have two that are essentially the same as what Lisa just went

through.

"If no one's at risk, why spend 7 million dollars?"

And also, "Why was the no-action alternative not carried through when there is very little direct human risk?"

I'll go along with Lisa. I think in this case we do have a significant amount of contamination in our groundwater and that it is to our benefit to go out and there and try to do something to try to reduce that level of contamination.

MR. HARELSON: I have a question here that says, "How much water would be pulled out in the first two years? Would it all go to the disposal pond?"

The capacity of the disposal pond is -- the infiltration evaporation capacity of the disposal pond is about 50 gallons per minute; so that's the rate that we are planning to pump at. And, yes, that would all go to that disposal pond.

Then next question I have is, "How did you determine the area of contamination?" And then a second question, "How clean is the final

treated water?"

The area of contamination that was shown on the maps that Jerry had was based on the EPA-established safe drinking water act concentration, maximum concentration level; so those boundaries were drawn for each specific contaminant. The largest, the plume that was shown, trichloroethylene, and that was the contaminant that spread the furthest.

The other question was, "How clean is the final treated water?"

We have talked with the State and EPA and have established a performance-based standard for treating the water, which would be -- remove 90 percent of what is in the water as it comes out of the well, remove 90 percent of that contamination.

MR. ZIMMERLE: I have three other questions here.

"Will lead and strontium 90 together in the ion exchange resins constitute a mixed waste as in Alternative No. 2?"

We feel that the lead levels are not going to be high enough to create a mixed waste in this case. The ion exchange resins will

probably be -- pick up more common calcium and magnesium long before they get filled up with lead strontium.

Also, "Is there a way to separate the lead from the strontium prior to the ion exchange where it would be less possible to separate, thus reducing the rad waste and enable us to recycle the lead?"

Again, at the levels of lead that we have in the water, there's no -- they're not high enough concentration to be able to bring it back for any kind of economical recycling.

And, "Is the lead radioactive?"

And no, not that we're aware of.

One other question is, "How many other injection wells of TAN type are there on the INEL site?

"What about ATR or CPP?"

I don't have that tremendous amount of information on this one. I don't believe there are any other -- well, I think I'll back off completely say I'm going to pass.

MODERATOR GREEN: Do you want to reiterate the question and I can see if I can shed any light, and if I'm not positive we can

get the answer aside from this meeting. We'll get a better answer.

MR. ZIMMERLE: "How many other injection wells of the TAN type are there on the INEL site?

"What about ATR or CPP?"

MODERATOR GREEN: There has been an injection well operating at CPP that has since, I guess, in the last five years or so, that has been concreted up, plugged. It did not receive the same type of wastewater at all as what was injected into this well and we have quite a bit of sampling data related to both what was in the well before it was plugged and also the type of wastewater that was injected into that well.

At the Test Reactor Area there is also at least one injection well that is currently the focus of a sampling effort under the FFA/CO, so we'll be looking at it to determine if there are sediments similar that would pose a risk in a separate activity under our agreement.

Here's a question. "I worked at TAN 1978, '79 and '80, and drank the water. Was it checked for acceptable drinking water standards in that time frame?"

I'm going to put somebody on the spot in the audience who has been working on a project related to drinking water monitoring at the INEL.

Leah, can you state based on your experience with the drinking water action data whether TAN was monitored in the '78/'79/'80 time frame?

MS. STREET: The TAN the -- the INEL has had selected wells being monitored for groundwater quality since 1949 and the TAN area is in one of them. And specifically 1978, '79, I can't recall off the top of my head, but if it would have been a problem, it would have been noted at that time.

And I'm sure that any elevated values above any standards or that would have been considered high would have been addressed and would have not had any of our workers at the site drinking contaminated water.

If you'd like, whoever posed the question, if you'd give your name and address, I can check into this further.

MODERATOR GREEN: If you could provide your name and address to Reuel Smith at the back of the room on a piece of paper with this

question, we can be sure and get back with you with accurate information on monitoring that was done at that time.

Yes, sir.

AUDIENCE MEMBER: Lisa, drinking water samples taken at TAN in 1985 and 1987 showed no trace of the trichloroethylene.

MODERATOR GREEN: Thank you, Bob.

Yes, sir?

AUDIENCE MEMBER: Drinking water at TAN was not tested for volatile organic compounds until 1987, or anywhere else on the INEL. They were tested for total organic carbons, but that's a totally different thing.

MODERATOR GREEN: Okay.

Yes, sir?

AUDIENCE MEMBER: You didn't quite answer my question on how you determined the extent of the area, depth and so on. Did you drill a whole bunch of test wells or do you have long-term meters or whatever?

MR. HARELSON: I'm sorry. I didn't understand the question.

We have a whole number of wells that were drilled out there. The USGS geologic survey

has been installing wells out there for a number of years.

When the contamination was first discovered in the production wells at TAN, there was an investigation that took place. There were a number of wells that were installed in 1988 and '89, or was it '89 and '90, and those wells defined the boundaries that we showed on the slide.

AUDIENCE MEMBER: How many are there?

MR. HARELSON: I'll let Jerry answer that one.

MR. ZIMMERLE: Right now we have about 30 -- well, we drilled I think nine wells in each of those years, '89, '90, and there are a few other wells out there, so there are about 35.

AUDIENCE MEMBER: All in different places?

MR. ZIMMERLE: Yes.

While I've got a chance, let me add a little clarification on the injection well question that came up.

There are three other injection wells in the TAN area in each of the -- there's one at each of the four main facilities, but the other

three injection wells are primarily used for process water and we found no high levels of contamination coming from those wells at this time.

MODERATOR GREEN: Ron, would you like to address some of these questions?

MR. LANE: "Do you have a model or projection best-case/worse-case of the contaminant migration?"

Well, there are models being proposed in the Remedial Investigation/Feasibility Study. There are several that are being looked at and the opportunity to comment on those will be forthcoming.

Second part of this question is, "What is the ratio of amount of contamination if nothing is done versus amount if your best case effort is done?"

As far as the ratio, I really don't know. Anyone want to step in on that?

MR. ZIMMERLE: One thing we tried to show on one of the slides, the aerial view, is how the contamination is in layers or boundaries. And what we're still finding is the vast -- I won't say the vast majority, but most

of the contamination is within that quarter-mile to half-mile boundary from the injection well.

The slide itself showed the concentrations going from one part per million then dropping down by a factor of ten within that quarter-mile boundary, and down another factor, it would be half again after that as you start to get further out.

So we figure for a rough guess that 85 to 90 percent of that contamination is still within that quarter-mile/half-mile of that injection well.

MR. LANE: Okay. Last part of this three-part question is, "Have you considered large pumping from the contaminated area, filtering and reinjection of clean water back into the contaminant zone as to circulate and thus stop migration?"

That's another consideration under the Remedial Investigation and Feasibility Study of pumping larger volumes of water and reinjection.

MODERATOR GREEN: "What year did the TAN drinking water first exceed standards?"

I think we've already discussed that. It was identified that 1987 -- it occurred in

1987, although -- excuse me, did I misspeak?

Go ahead, Bob.

BOB MONTGOMERY: TAN groundwater never really has exceeded -- let me rephrase that.

The TAN drinking water has never exceeded the MCL of 5 ppb. The sparger was installed when the last sample was about 4.9 ppb. After that, each monthly sample has shown the drinking level water to be far below 5 ppb, roughly one to two to three ppb maximum.

The TAN groundwater at the well heads for the drinking water wells has exceeded the 5 ppb, and that occurred about mid-'88, but the drinking water has never exceeded the 5 ppb.

MODERATOR GREEN: "Please state which threshold criteria the no action alternative does not meet."

Without the treatment system on the TAN drinking water, the risk -- it's likely that the risk to human health and the environment would be not met and also the meeting State and Federal requirements may not be met if the sparger were turned on.

Have we answered all of the questions on note cards?

Have you got one, Howard?

MR. BLOOD: I've got one that says, "None of the 'purposes of interim action' listed on the slide are legal uses of an interim action, e.g. to reduce risk or expedite total site cleanup. Comment?"

I guess my easy comment on that is that, at least from our perspective, the action as proposed does, in fact, expedite total site cleanup, because it helps eliminate the source of the contamination.

If we allow the contamination to sit there for another couple years, it is not going to stay stationary, but will continue to dissipate in the aquifer. And then if we have to go after it to get it down to the cleanup standard, there's just that much greater volume of water that will have to be pumped.

And the Snake River plain aquifer is a productive aquifer. We're talking about large volumes of water being contaminated by delaying the action.

So unless I misunderstood the question, I don't think that we are not meeting the use of an interim action to help either eliminate an

existing problem or at least keep it from getting worse.

And this is a fairly common approach with groundwater contamination, is an interim action to try to contain the plume so that it doesn't continue to grow and further complicate the problem of cleanup as a final action.

MODERATOR GREEN: I'd like to take a poll right now at this time to find out how many people would like to provide oral comments specifically on the TAN interim action proposed plan so we can judge when we should wind down the question period and begin the comment period.

Could you please raise your hand if you intend to provide an oral comment on this plan.

One, two, three, four?

Okay. We've got one more question on a card here, and then if it's all right we will begin to take the oral comments during the official public comment period for the proposed plan for the TAN interim action.

This question is, "What percent of the problem are you trying to solve?"

I don't know that we have identified it in terms of percentages.

Jerry, if you have a better answer that --

MR. ZIMMERLE: I go back to the earlier response that since 85 to 90 percent of the contamination is still near the well, we'll be going directly after that. I can't give you a percentage of what we'll get. That will depend on how the system operates, but we're going right after the heart of the contamiation that still remains.

MODERATOR GREEN: More questions?

Yes, sir.

AUDIENCE MEMBER: Are you going to be discharging right out of the injection well? Will that form a depression right there? Is that what you're shooting for or --

MR. ZIMMERLE: Yeah, we'll be taking water right out of the injection well.

MODERATOR GREEN: There was another hand?

Yes, sir?

AUDIENCE MEMBER: How much does it cost each year to operate the water purification system at TAN?

MR. ZIMMERLE: The air sparging

system?

AUDIENCE MEMBER: Yes.

MR. ZIMMERLE: I can't give you a specific answer. If you'd like to write that down, we'll check into that.

AUDIENCE MEMBER: Just the one that's in use now. I wanted to compare which would be more cost effective, either continuing purification for the INEL employees or cleaning this up.

MR. ZIMMERLE: I can't give you a specific number off the top of my head. I'd have to go check with the TAN facilities people who actually own that equipment. We're not in charge of cleaning drinking -- or the water supply. It's our responsibility for the contamination in the groundwater.

MODERATOR GREEN: But we would be glad to provide that information to you. If you would please write the question down and provide it to Reuel Smith at the back of the room, we'll get an answer to you as soon as possible.

Well, once more, we'll enter into the portion of the meeting where we take oral comments to EPA, State, and DOE regarding the

proposed plan to reduce contamination near the injection well and the surrounding groundwater at Test Area North.

If you would like your comment or question for the Responsiveness Summary, please feel free to come forward for this part of the meeting and state those comments into the microphone so that they can be recorded by the court reporter.

Also, please identify your name and address at the start of your comments, or submit your written testimony prior to the end of the comment period, which ends on March 13.

Again, during this portion of the meeting, we'll listen to your comments, but generally not respond to them. They'll be responded to in the Responsiveness Summary.

So if we'd have a volunteer to come up to the microphone and provide their oral comments, please.

MR. BREITER: I'm getting sleepy, so I want to go home quick.

My name is Edward Breiter, that's spelled B-r-e-i-t-e-r. I'll help you that much. I live at 6549 South 15 West, Idaho Falls,

83402.

In general, I'm not going to go into the technical aspects of this, but I had experience with government agencies before, especially the EPA for a period of 12 years, and and I have got a lot of faith in you people at the lower echelons, but I know there's a genetic disease afflicts all our governmental agencies and I've run into the EPA especially since 1980.

Mr. Blood, I'm sure you know that, but you don't dare say so.

There's always sort of a coverup and just stonewalling you get and breaking of ice. I don't know that it happens in every government agency, but I think the only suggestion I have to prevent this is to keep it out in the open and let us know what you're doing and let us see what you're doing.

And we'll keep stirring things and we'll back you up, so you won't be like Mr. Mumma being canned. And as I know of an EPA agent who was very cooperative of me, he got shunted down, downhill. It happens. We -- you know it happens.

And I really am very much impressed

with Mr. Zimmerle. I hope you have charge of this project, 'cause I think you might do a good job if you're allowed to.

MR. ZIMMERLE: Thank you.

MODERATOR GREEN: Thank you, Mr. Breiter.

MR. STAPLEY: My name is Bret Stapley, 460 West 700 South, No. 17, Rexburg, Idaho, 83340.

I can't quite make the exact comment I wanted to do, because of the lack of information as far as the cost effectiveness of the treatment of water for the drinking purposes at TAN compared to the cleanup of water.

If it's more cost effective -- or should I say if it's cheaper to keep cleaning the water as opposed to pumping it out and cleaning it up or attempting to do it that way, why can't we do that?

I realize I talked to Mr. Blood of EPA earlier on this evening and he stated that, you know, they have this policy, I think it's a law now, dilution is no solution, it is a problem; yet industry nationwide uses that as a solution. They use dilution every day.

If they've got a concentration that will exceed it, exceed the EPA limits, they'll pump a little bit extra water through their system to drop it down those limits. And as far as when the water gets off the sites, in the next, what, 150 years, when it finally moves beyond INEL boundaries where it will be open to public drinking water wells, meaning to the public at large, which is us, the concentrations of those contaminants most likely will be what, microparts per trillion? So why not leave it there and let it clean itself up over the next hundred years or so, and continue to clean the water for the employees at TAN?

Thank you.

MODERATOR GREEN: Thank you, Mr. Stapley.

Do we have anybody else who would like to provide oral comments on the TAN interim action plan?

Mr. Tanner?

MR. TANNER: John Tanner from Idaho Falls.

I can go along with cleaning up the most concentrated water, as you are intending to

do, and again I hope you will use as good judgment in knowing when to quit.

It's certainly not worth going after the water that happens to exceed the drinking water standard at the moment, because, first place, you will have removed the source, no more is being put down there, and it certainly would make sense to let the rest of it dilute itself as it travels down the aquifer.

MODERATOR GREEN: Thank you, Mr. Tanner.

We have a comment here from Mr. Marion Elliott, Tetonia, Idaho.

"The interim plan should incorporate a determination of the rate of the -- rate as well as extent of contamination in all dimensions. A profile should be made of contamination levels at each monitoring well at each depth. The depth limit of contamination should also be determined at each monitoring well.

"Because of the public concerns for transport of hazardous waste, Alternative 2 as the interim plan should include further studies and design for development on Alternative 4 as a final cleanup plan.

"The Alternative 4 cost savings warrant further consideration for the long-term fix, especially if the scope of the cleanup becomes greater than presently estimated."

Do we have anybody else who would like to provide oral comments on the TAN interim action proposed plan for the record?

Okay. With that, I guess we have received -- I'll consider the oral comment period for the TAN interim action to be closed.

We have received a comment here that does not have a name and address associated with it. I will read it for your information, but we will need a name and address submitted in writing if it is to be considered entered into the record and addressed in the Responsiveness Summary.

I'll read it here, but please, the commentor should be advised that if they want this addressed in the Responsiveness Summary, we need to have it written, provided in written form with your name and address, so it can be responded to.

And the comment is, "You have not quantified the problem to scientific or technical standards: one, quantity; two, available to

cover; three, long-term public risk. When will you get better answers?"

So with that, we're approximately 40 minutes ahead of schedule.

The third presentation is quite a bit briefer than the first and second presentations. I guess I'd like to get just a five-minute break here, so we can have a clear break between the presentations.

We'll start up again at a few minutes before 9:00.

Thank you very much.

(Meeting recessed.)

REPORTER'S CERTIFICATE

STATE OF IDAHO)
) ss.
COUNTY OF ADA)

I, DENECE GRAHAM, Certified Shorthand Reporter and Notary Public in and for the State of Idaho, do hereby certify:

That said meeting was taken down by me in shorthand at the time and place therein named and thereafter reduced to typewriting under my direction, and that the foregoing transcript contains a full, true and verbatim record of said meeting.

I further certify that I have no interest in the event of the action.

WITNESS my hand and seal this 29th day of February, 1992.

Denece Graham

DENECE GRAHAM, CSR and
Notary Public in and for
the State of Idaho.

My Commission Expires: 4-17-94